CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

September 2021, Number 21-15

SOCIAL SECURITY'S FINANCIAL OUTLOOK: THE 2021 UPDATE IN PERSPECTIVE

By Alicia H. Munnell*

Introduction

The 2021 Trustees Report, which typically comes out in the spring, emerged in the last week in August. That's not surprising given a new Administration and a somewhat more complicated story than usual.

Although the Trustees assert that COVID-19 and the ensuing recession had "significant effects" on Social Security's finances, it is hard to see much of an impact in the report. In the short term, employment, earnings, interest rates, and Gross Domestic Product (GDP) – all of which dropped substantially in 2020 – are expected to return to their pre-COVID levels by 2023, and births delayed in 2020-22 are assumed to be deferred to 2024-26. The increase in deaths due to COVID actually improves the system's finances. As a result, the depletion date for the trust fund moved up by only one year from 2035 to 2034.

For the 75-year projection, given the uncertainty about the long-run impact of COVID, the Trustees assume that the pandemic and recession would have no effect on the 75-year assumptions. The three changes they did make to the ultimate assumptions – raising the total fertility rate, lowering the rate of mortality improvement, and lowering the unemployment rate – all improve the outlook substantially.

Yet, the 75-year deficit increased from 3.21 to 3.54 percent of taxable payrolls. The biggest movers were: 1) fewer births than expected in 2020 and recognition that women will continue to delay childbearing; 2) a 1-percent decline in the level of potential GDP due to COVID and the accompanying recession; 3) updates to projections of initial benefits; and 4) moving the valuation period ahead one year.

This *brief* updates the numbers for 2021 and puts the current report in perspective. It also examines the moving pieces in the fertility assumptions and their impact on the 75-year projections and takes a quick look at the cost-of-living adjustment payable in January 2022 and at the projected depletion of the trust fund in 2034.

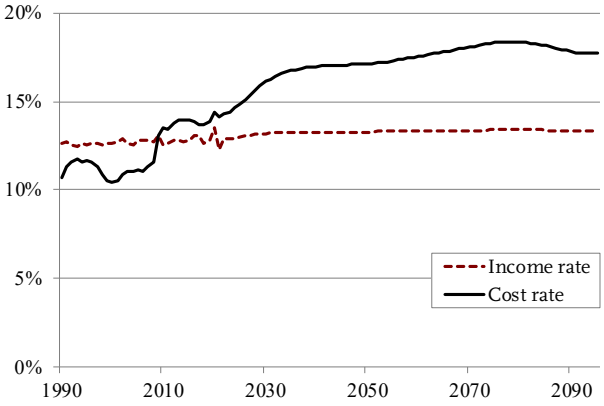
The bottom line is the 75-year deficit has increased, and it is not primarily due to COVID. At the same time, Social Security has once again demonstrated its worth during these tumultuous times, when – in the face of economic collapse – it continued to provide steady income to retirees and those with disabilities. To maintain confidence in this valuable program and avoid precipitous cuts in 2034, Congress needs to address the program's 75-year deficit.

* Alicia H. Munnell is director of the Center for Retirement Research at Boston College and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. The author thanks Anqi Chen for helpful comments and Patrick Hubbard for excellent research assistance.

The 2021 Report

The Social Security actuaries project the system's financial outlook over the next 75 years under three sets of cost assumptions – high, low, and intermediate. Our focus is on the intermediate assumptions, which show the cost of the program rising rapidly to about 17 percent of taxable payrolls in 2040, at which point it drifts up to 18 percent of taxable payrolls (see Figure 1).

Figure 1. Projected Social Security Income and Cost Rates, as a Percentage of Taxable Payroll, 1990-2095



Source: 2021 Social Security Trustees Report, Table IV.B1.

The increase in costs is driven by demographics, specifically the drop in the total fertility rate after the baby boom (those born between 1946 and 1964). Women of childbearing age in 1964 had an average of 3.2 children; by 1974 that number had dropped to 1.8. The combined effects of the retirement of baby boomers and a slow-growing labor force due to the decline in fertility reduce the ratio of workers to retirees from about 3:1 to 2:1 and raise costs commensurately. In addition, the long-term increase in life expectancies causes costs to continue to increase even after the ratio of workers to retirees stabilizes. The increasing gap between the income and cost rates means that the system is facing a 75-year deficit.

The 75-year cash flow deficit is mitigated somewhat in the short term by the existence of a trust fund, with assets currently equal to about two years of benefits. These assets are the result of cash flow surpluses that began in response to reforms enacted in 1983. Since 2010, however, when Social Security's cost rate started to exceed the income rate, the government has been tapping the interest on trust fund assets to cover benefits. And, in 2021, as taxes and interest are expected to fall short of annual benefit payments, the government will start to draw down trust fund assets to meet benefit commitments. These drawdowns will continue until the trust fund is depleted in 2034 (see Table 1).

Table 1. Key Dates for the Social Security Trust Fund, 2017-2021 Trustees Reports

Event	2017	2018	2019	2020	2021
First year outgo exceeds income excluding interest	2010	2010	2010	2010	2010
First year outgo exceeds income including interest	2021	2018	2020	2021	2021
Year trust fund assets are depleted	2034	2034	2035	2035	2034

Sources: 2017-2021 Social Security Trustees Reports.

The depletion of the trust fund does not mean that Social Security is "bankrupt." Payroll tax revenues keep rolling in and can cover 78 percent of currently legislated benefits initially, declining to 74 percent by the end of the projection period. Relying only on current tax revenues, however, means that the replacement rate – benefits relative to pre-retirement earnings – for the typical age-65 worker would drop from about 37 percent to about 27 percent – a level not seen since the 1950s. (Note that the replacement rate for those claiming at 65 is already scheduled to decline from 39 percent to 37 percent because of the ongoing increase in the Full Retirement Age.)

Moving from cash flows to the 75-year deficit requires calculating the difference between the present discounted value of scheduled benefits and the present discounted value of future taxes plus the assets in the trust fund. This calculation shows that Social Security's long-run deficit is projected to equal 3.54 percent of covered payroll earnings. That figure means that if payroll taxes were raised immediately by 3.54 percentage points – roughly 1.8 percentage points each for the employee and the employer – the

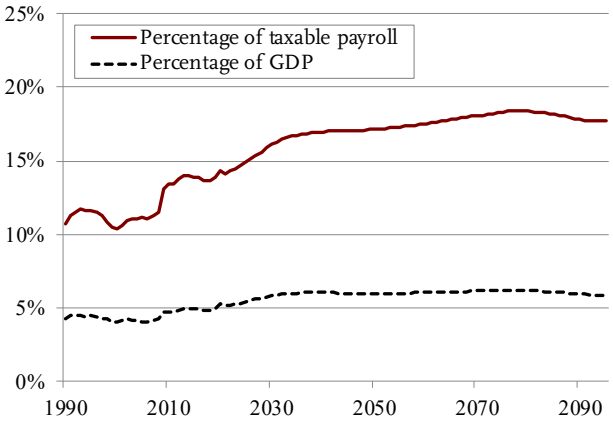
government would be able to pay the current package of benefits for everyone who reaches retirement age through 2095, with a one-year reserve at the end.

At this point in time, solving the 75-year funding gap is not the end of the story in terms of required tax increases. Once the ratio of retirees to workers stabilizes and costs remain relatively constant as a percentage of payroll, any solution that solves the problem for 75 years will more or less solve the problem permanently. But, during this period of transition, any package of policy changes that restores balance only for the next 75 years will show a deficit in the following year as the projection period picks up a year with a large negative balance. Policymakers generally recognize the effect of adding deficit years to the valuation period, and many advocate a solution that involves "sustainable solvency," in which the ratio of trust fund assets to outlays is either stable or rising in the 76th year. Thus, eliminating the 75-year shortfall should be viewed as the first step toward long-run solvency.

Some commentators cite Social Security's shortfall over the next 75 years in terms of dollars – $19.8 trillion. Although this number appears very large, the economy will also be growing. So, dividing this number – plus a one-year reserve – by taxable payroll over the next 75 years brings us back to the 3.54 percent-of-payroll deficit discussed above.

The Trustees also report Social Security's shortfall as a percentage of GDP. The cost of the program is projected to rise from about 5 percent of GDP today to about 6 percent of GDP as the baby boomers retire (see Figure 2). The reason why costs as a percentage of GDP more or less stabilize – while costs as a percentage of taxable payroll keep rising – is that taxable payroll is projected to decline as a share of total compensation due to continued growth in health benefits.

Figure 2. Social Security Costs as a Percentage of GDP and Taxable Payroll, 1990-2095

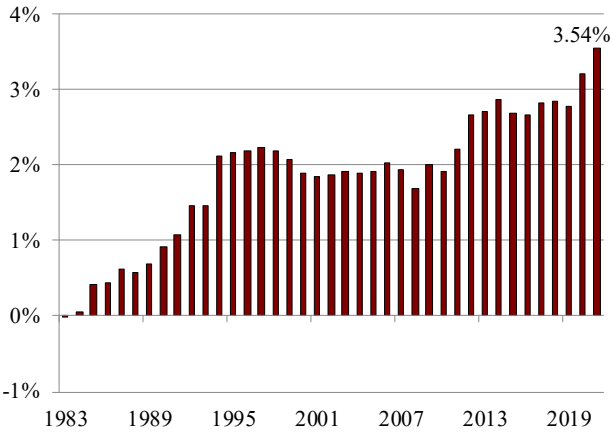


Source: 2021 Social Security Trustees Report, Figures II.D2 and II.D4.

2021 Report in Perspective

The 75-year deficit in the 2021 Trustees Report is the largest since 1983 when Congress enacted major legislation to restore balance (see Figure 3). The questions are why did the deficit grow over the period 1983-2021 and why has it increased since last year's report.

Figure 3. Social Security's 75-Year Deficit as a Percentage of Taxable Payroll, 1983-2021



Sources: 1983-2021 Social Security Trustees Reports.

Changes in 75-Year Deficit Since 1983

Social Security moved from a projected a 75-year actuarial surplus of 0.02 percent of taxable payroll in the 1983 Trustees Report to a projected a deficit of 3.54 percent in the 2021 Report. As shown in Table 2 (on the next page), leading the list of reasons for this change is moving forward the valuation period. That is, the 1983 Report looked at the system's finances over the period 1983-2057; the projection period for the 2021 Report is 2021-2095. Each time the valuation period moves out one year, it picks up a year with a large negative balance.

Table 2. Reasons for Change in the 75-Year Balance From 1983 to 2021, as a Percentage of Taxable Payroll

Item	Change
Actuarial balance in 1983	0.02%
Changes in actuarial balance due to:	
Valuation period	-2.21
Economic data and assumptions	-1.16
Disability data and assumptions	-0.53
Legislation/regulation	+0.06
Methods and programmatic data	+0.10
Demographic data and assumptions	+0.18
Total change in actuarial balance	-3.56
Actuarial balance in 2021	-3.54

Source: Chu and Burkhalter (2021).

A worsening of economic assumptions – primarily a decline in assumed productivity growth and the impact of the Great Recession – have also contributed to the increase in the deficit. Another contributor to the growth in the deficit over the past 35 years has been increases in disability rolls, although that picture has changed dramatically in recent years.

Partially offsetting the negative factors has been a reduction in the actuarial deficit due to legislative and regulatory changes. Methodological improvements and updated data have also had a positive impact on the system's finances. The biggest boost has come from changes in demographic assumptions – primarily higher ultimate fertility rates and a slower pace of mortality improvement overall.

Changes from Last Year's Report

Social Security's long-range 75-year deficit increased from 3.21 percent of taxable payrolls in the 2020 Trustees Report to 3.54 percent in this year's Report – a net change of 0.33 percent of taxable payrolls. Basically, the new ultimate assumptions for fertility, mortality and unemployment substantially improve the system's finances; COVID has a slight negative effect from the 1-percent permanent reduction in the level of potential GDP offset by a near-term increase in mortality; and the rest of the changes – led by fertility adjustments – have a large negative effect on the outlook (see Table 3).

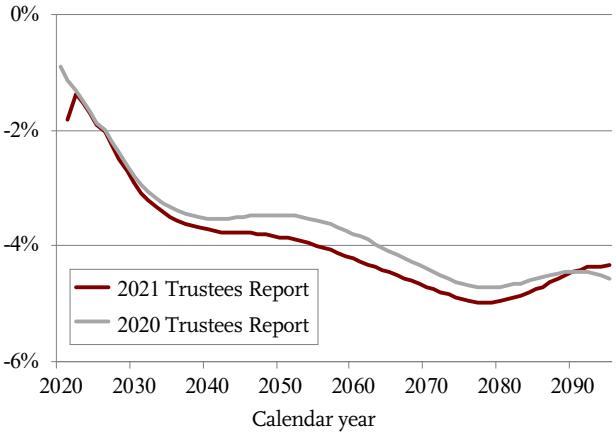
Table 3. Reasons for Changes in the 75-year Balance from the 2020 to the 2021 Trustees Report

Changes to "ultimate assumptions"	+0.20%
Increase total fertility rate from 1.95 to 2.0	+0.09
Reduce unemployment rate from 5.0 to 4.5	+0.07
Reduce rate of mortality improvement	+0.04
Changes due to COVID	-0.05
Update to near-term mortality assumptions	+0.04
Level of GDP 1 percent lower than last year	-0.09
Changes due to other factors	-0.48
Lower 2020 birth rates and longer transition to ultimate fertility	-0.14
Updates to projections of initial benefits	-0.09
Change in valuation period	-0.06
Miscellaneous small changes	-0.19

Source: Author's tabulations from *2021 Social Security Trustees Report.*

The breakdown in Table 3 makes clear that the increase in the 75-year balance since last year's Trustees Report is not a COVID story. Rather the single largest reason for the shortfalls between 2035 and 2085 (see Figure 4 on the next page) involves changes in the fertility rate projections.

Figure 4. OASDI Annual Balances: 2020 and 2021 Trustees Reports, 2020-2095



Source: 2021 Social Security Trustees Report, Figure IV.B4.

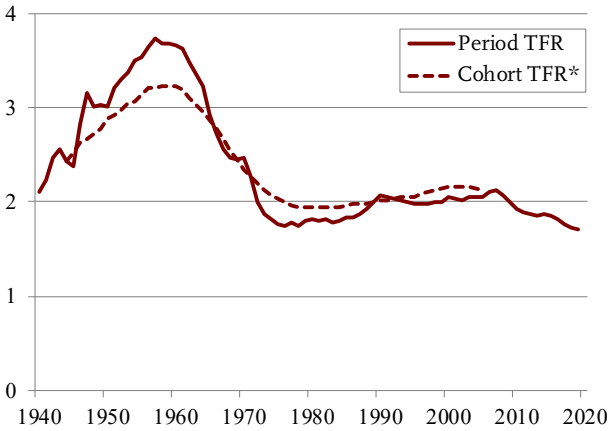
2021 Changes to Fertility Assumptions

The Trustees made several changes to the intermediate projections of fertility in the 2021 Report. They changed the methodology; they increased the ultimate total fertility rate assumption; and they incorporated the lower-than-expected birth rates in 2020.[1]

Methodology. On the recommendation of the 2019 Technical Panel, the Trustees moved from projections based on a period total fertility rate to one based on a cohort total fertility rate. The *period total fertility rate* (TFR) for a given year is the average number of children who would be born to a woman throughout her reproductive years if she were to experience, at each point in her life, the birth rates currently observed at that age. While the period TFR is not an actual measure of lifetime fertility, it has the advantage of giving a current estimate of likely lifetime fertility. The only way to have an accurate measure of lifetime fertility is to identify the number of births that women have actually had at the end of their childbearing years. The *cohort total fertility rate* is such a measure.

If the age structure and age of motherhood remain constant, the two TFR measures will be the same. But the age at which women have children has not remained constant – it has been increasing – so the period TFR is currently lower than the cohort TFR (see Figure 5).

Figure 5. Period Total Fertility Rate and Cohort (Completed) Total Fertility Rate, 1940-2020

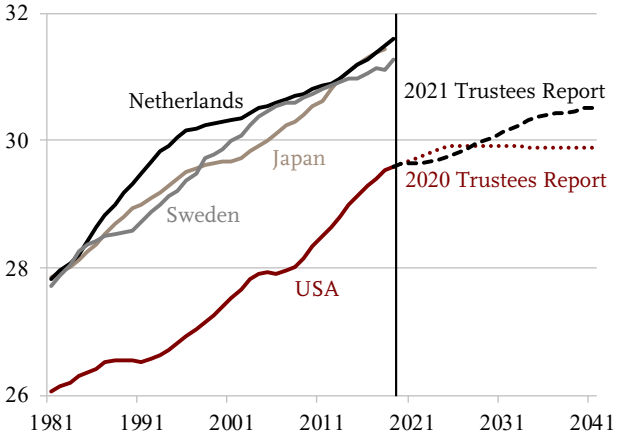


*Cohort TFR data are for cohort born *t*-26, using the adjustment formula used by Preston and Hartnett (2009).
Source: Max Planck Institute for Demographic Research and Vienna Institute of Demography, *Human Fertility Database* (1940-2020).

Previously, the Trustees focused on the period TFR and simply assumed that the age of childbirth would stop increasing. The 2019 Technical Panel argued for identifying the ultimate cohort TFR and adopting realistic assumptions about the age of first birth. As shown in Figure 6 (on the next page), the Trustees report now includes assumptions about the mean age of birth more consistent with the increasing trend in the United States and the experience of other developed countries.

The implications of the shift in methodology is that the TFR remains lower for longer. Specifically, the period TFR will not reach an average level of 2.0 until 2056 – about 25 years later than the ultimate level was reached in last year's report. This extended period of low TFR increases the 75-year deficit by 0.10 percent of taxable payrolls.

Figure 6. Mean Age at Birth for All Births, U.S. and Selected OECD Countries



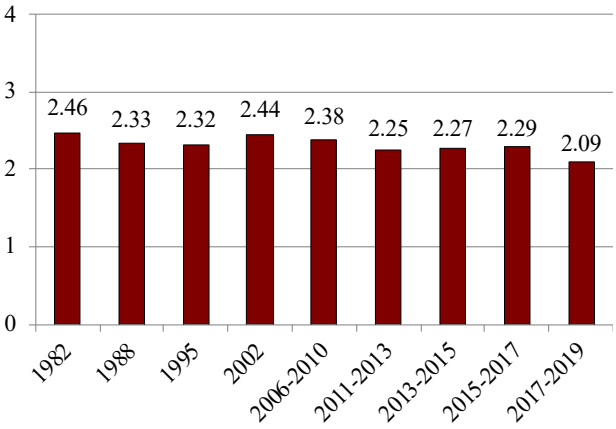
Note: Precise data from the Trustees are not available; this figure assumes that the Trustees fully incorporate the recommendations of the 2019 Technical Panel.
Sources: Human Fertility Database (1940-2020) and Social Security Advisory Board (2019).

Ultimate TFR Assumption. The Trustees, however, made another change that *improved* Social Security finances by 0.09 percent of taxable payrolls: they increased the ultimate total fertility rate assumption from 1.95 children per woman to 2.0. Two arguments are possible for making this change. First, as shown in Figure 5, the completed fertility rate for women reaching 40 is currently slightly above two. The counterargument here is that this measure reflects childbearing decisions made in a very different world and therefore provides little insight on the fertility plans of young women today.

The second possible argument for a higher cohort TFR, and one emphasized by the Trustees, is that the birth expectations of women 20-24 have remained above two children (see Figure 7).

Two points are important here, however. First, expectations among women ages 20-24 have declined by 0.35 children since the turn of the century. Second, expected fertility tends to fall short of aggregate fertility. Indeed, comparing expectations at ages 20-24 with completed fertility for cohorts born from 1949-1964 shows that woman generally over-predict how many children they will have – the actual is around 0.3 children less than expected.[2] Thus, if the expectations of today's 20-24-year-olds follow the historic pattern, they would be expected to have less than two children over their lifetime.

Figure 7. Total Births Expected Among Women Ages 20-24, Various Years



Sources: Centers for Disease Control and Prevention, *National Survey of Family Growth* (selected years).

Updated Data on Birth Rates. Birth data for 2020 indicate somewhat lower fertility than was assumed for 2020 in last year's Report. These updated data result in lower births during the extended transition period to the ultimate level, decreasing the 75-year balance by 0.04 percent of taxable payrolls.

The bottom line is that, while the net effect of all of the fertility changes on the long-run intermediate assumptions is only -0.05 percent of taxable payrolls, the Trustees made a lot of changes to this component of the 75-year projection in the 2021 Report.

A Note on Short-Run Developments

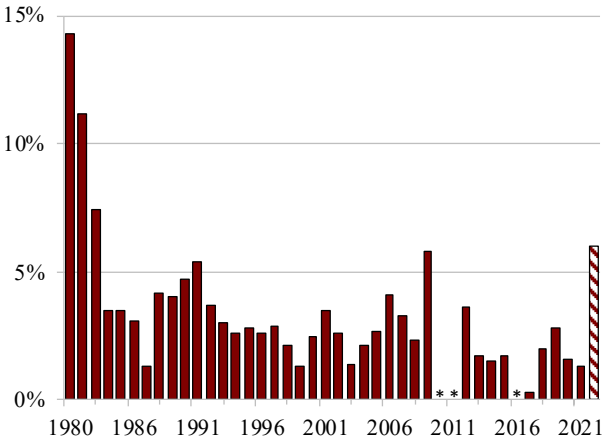
In the short run, two developments of note are the likely large cost-of-living adjustment (COLA) payable in 2022 and the depletion of the trust fund in 2034.

2022 COLA

Usually inflation does not have a significant impact on Social Security finances, because benefits and payroll tax revenues go up in lock step in response to rising prices. But this year things are different. Benefits will increase due to a host of COVID-related price hikes, but it appears that payrolls are not rising commensurately. If benefits are, say, 3 percent higher than expected – that is, Social Security provides an actual COLA of 6 percent compared to an assumed COLA of 3 percent – and nothing else changes, the COLA could shift the depletion date by about three months.

And a 6-percent COLA seems to be the most likely number for 2022. The COLA is based on the change in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) over the last year, but since the COLA first affects benefits paid after January 1, Social Security needs to have figures available before the end of the year. As a result, the adjustment for January 1, 2022 will be based on the increase in the CPI for the third quarter of 2021 over the third quarter of 2020. Given the recent rise in inflation, this year's COLA will likely be the highest in four decades (see Figure 8).

Figure 8. Social Security Cost-of-Living Adjustment, 1980-2022



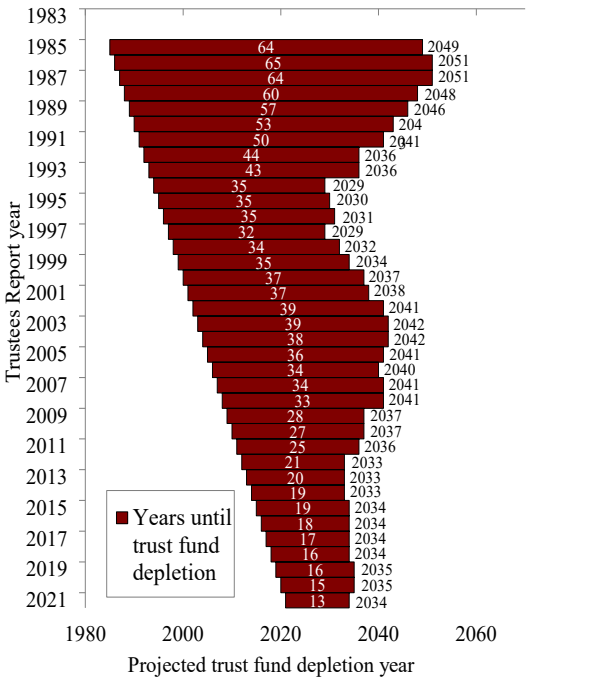
Notes: Asterisks indicate no COLA in 2010, 2011, and 2016. COLA for 2022 is estimated.
Sources: U.S. Social Security Administration (2020) and author's calculations from U.S. Bureau of Labor Statistics (2021).

Trust Fund Depletion

In projecting the Trust Fund depletion, the Trustees did not incorporate much bad news. As noted, they did not project a spike in inflation; and they assume that most of the other effects of COVID and the accompanying recession dissipate fairly quickly. Employment, earnings, interest rates, and GDP, which all dropped substantially in 2020, are expected to return to their pre-COVID levels by 2023, and births delayed in 2020-22 are assumed to occur in 2024-26. The increase in deaths due to COVID actually improves the system's finances. Thus, the 2021 Trustees Report showed only a slight movement in the depletion date – from 2035 to 2034.

An acceleration of the trust fund depletion date by one year is not big news. Virtually since inception the Trustees have projected its demise. The point is that the window of opportunity to restore balance has narrowed dramatically over time. Whereas we used to have 65 years to figure out how to avoid trust fund depletion, with the 2021 Trustees Report's projected depletion date of 2034, that number has now dropped to 13 years (see Figure 9). If nothing is done before depletion, benefits for all current and future retirees will have to be cut by 21 percent.[3]

Figure 9. Projected Trust Fund Depletion Years, 1983-2021



Sources: 1983-2021 Social Security Trustees Reports.

Conclusion

The pandemic has underscored the importance of Social Security as a critical and reliable source of support for retirees and those with disabilities. At the same time, the 75-year deficit has increased, and it is not due to COVID. Rather, a new valuation period, revised fertility assumptions, and a host of methodological improvements and data updates have led to higher cost projections. These increases were partially offset by three changes to the ultimate assumptions – a higher total fertility rate, a lower rate of mortality improvement, and a lower unemployment rate – all of which improved the outlook substantially.

Despite these changes, the bottom line remains the same. Social Security is facing a long-term financing shortfall that equals 1 percent of GDP. The changes required to fix the system are well within the bounds of fluctuations in spending on other programs in the past. Moreover, action needs to be taken before the trust fund is depleted in 2034 to avoid a precipitous cut in benefits. Americans support this program; their representatives should fix its finances.

Endnotes

1 To acknowledge the uncertainty around future fertility rates, they lowered the fertility assumption for the high-cost scenario.

2 For a younger cohort of women (born 1980-84), Chen and Gok (2021) project a larger gap between expectations and completed fertility of 0.48.

3 The estimated benefit cut is 25 percent if the reduction were applied only to those who become eligible for benefits in 2021 or later.

References

Centers for Disease Control and Prevention, *National Survey of Family Growth* (NSFG), 2002, 2006-2010, 2011-2013, 2013-2015, 2015-2017, and 2017-2019. Atlanta, GA.

Chen, Anqi and Nilufer Gok. 2021. "Will Women Catch Up to Their Fertility Expectations?" Working Paper 2021-4. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Chu, Sharon and Kyle Burkhalter. 2021. "Disaggregation of Changes in the Long-Range Actuarial Balance for the Old Age, Survivors, and Disability Insurance (OASDI) Program Since 1983." Actuarial Note Number 2021.8. Baltimore, MD: U.S. Social Security Administration.

Max Planck Institute for Demographic Research and Vienna Institute of Demography. *Human Fertility Database* 1940-2020. Rostock, Germany.

Preston, Samuel H. and Caroline Sten Hartnett. 2009. "The Future of American Fertility." Working Paper 14498. Cambridge, MA: National Bureau of Economic Research.

Social Security Advisory Board. 2019. *Report to the Board: 2019 Technical Panel on Assumptions and Methods*. Washington, DC.

U.S. Bureau of Labor Statistics. 2021. "Consumer Price Index: Wage and Clerical Workers." Washington, DC.

U.S. Social Security Administration. 1983-2021. *The Annual Reports of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*. Washington, DC: U.S. Government Printing Office.

U.S. Social Security Administration. 2019. "Cost-of-Living Adjustments." Baltimore, MD. Available at https://www.ssa.gov/oact/cola/colaseries.html

CENTER *for*
RETIREMENT
RESEARCH
at BOSTON COLLEGE

About the Center

The mission of the Center for Retirement Research at Boston College is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center conducts a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception in 1998, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

Affiliated Institutions

The Brookings Institution
Mathematica – Center for Studying Disability Policy
Syracuse University
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: https://crr.bc.edu/

The Center for Retirement Research thanks AARP, Bank of America, The Capital Group Companies, Inc., Capitalize, Prudential Financial, TIAA Institute, and Transamerica Institute for support of this project.

The research reported herein was supported by the Center's Partnership Program. The findings and conclusions expressed are solely those of the author and do not represent the views or policy of the partners, Boston College, or the Center for Retirement Research.